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## Food Allergies: Fact from Fiction

### FOOD ALLERGIES: FACT FROM FICTION

You are listening to ReachMD, the Channel for Medical Professionals. Welcome to GI Insights where we cover the latest clinical issues, trends and technologies in gastroenterological practice. GI Insights is brought to you by AGA Institute and sponsored by Takeda Pharmaceuticals North America. Your host for GI Insights is professor of medicine at University of Illinois, Chicago, Dr. Jay Goldstein.

We hear a lot about children's allergies, problems in school, on airplanes people cannot get snacks anymore because of food allergies. A common problem we hear about, a lot in lay press, and even in the medical press. Joining us to discuss food allergies fact or fiction is Dr. Sheila Crowe. Dr. Crowe is professor of medicine in the division of gastroenterology and hepatology department of medicine at the University of Virginia School of Medicine. She recently completed a 4-year term as a member of the Clinical and Integrative Gastrointestinal Pathobiology National Institute of Health Study Section.

DR. JAY GOLDSTEIN:

Welcome Dr. Crowe.

DR. SHEILA CROWE:

Thank you for having me.

DR. JAY GOLDSTEIN:

So, why do not we start off with something very simple? What is the difference between food allergies and food intolerance?

DR. SHEILA CROWE:

Well that is an important question. Food intolerances are general term for anybody who is experiencing some type of adverse reaction to food or food components. In contrast, food allergies are immune mediated adverse reactions to food.

DR. JAY GOLDSTEIN:

What are the most common allergies that people encounter true allergies?

DR. SHEILA CROWE:

True food allergies peanuts and tree nuts are amongst the top, it is roughly about 0.5% of the US population has allergies to those groups of food. Depend on the age when looking at in children, thinks like egg, milk; cow's milk and protein are very common compared to an adult.

DR. JAY GOLDSTEIN:

So, in the adult population we see more peanut allergies.

DR. SHEILA CROWE:

Well that is one of the allergies that seem to persist into adult life compared to eggs, milk, and things like that. Even men there has been some new literature that suggests that perhaps with time peanut allergy may subside. It used to be thought that if you were diagnosed with peanut allergy that would be lifelong problem, but there has been some more recent study that suggest that may damp down, although again that is always difficult because peanut allergy is the major cause of fatal adverse reactions to food and in fact food allergy is major cause of anaphylaxis as a cause of death now and peanuts will be the major cause within that group.

DR. JAY GOLDSTEIN:

When you say peanut allergy, this is really just peanuts, it is not pecans and almonds and other things like that.

DR. SHEILA CROWE:

That is right. There are different groups and not with different groups of antigen, but peanut allergy is a separate one from a tree nut allergy.

DR. JAY GOLDSTEIN:

So, you know I have heard people say that they cannot be next to somebody eating peanuts or peanuts

can even come in contact as a trace amount in certain foods, is this really true.

DR. SHEILA CROWE:

Yes, it is one of the most highly allergenic or immunogenic of the food protein to which people can be allergic just a tiny bit. For example a tiny bit of peanut protein and peanut oil, when someone is having fried food, a trace of peanut on somebody hand and touches the lip of someone who is allergic may get quite a significant allergic reaction to that.

DR. JAY GOLDSTEIN:

And again is there any cross reactivity with other products other than peanuts and if you have a peanut allergy.

DR. SHEILA CROWE:

Only if it contains peanuts and that is part of the problem for the consumer especially parents because there is so much that might be processed in a plant where peanut products are being made and food manufactures tend to be on the safe side, you may have seen if you ever read the ingredients of things may contain peanuts, does not mean it does contain peanut, but they do not want to be responsible in case there was a tiny bit of peanut contamination.

DR. JAY GOLDSTEIN:

One thing that we have not mentioned are seafood allergies. Is that an allergy or reaction to other components?

DR. SHEILA CROWE:

Generally, again, this is a little more complex, but generally seafood allergy is again a protein that mediates an IgE or an IgG 4 immune mediated response through allergy. Now, there are some instances where people can have a reaction that is anaphylactoid where the seafood or certain foods like strawberries and certain medications contrast that we use an CAT scans and IVPs can do this where it directly degranulates the mast cells and or the basophil and that would be a pseudoallergic or anaphylactoid type of reaction, but most seafood allergies are due to the proteins and they are not necessarily to all seafoods because they are not necessarily cross reacting so someone can have a shrimp allergy versus a lobster allergy, etc.

DR. JAY GOLDSTEIN:

What is the commonality for all these different allergies? What causes allergies to foods?

DR. SHEILA CROWE:

For true immune mediated allergy and here we are talking hypersensitivity, which is an immediate reaction. Technically, speaking there are some other delayed type reactions, celiac disease, and cows' milk protein enteropathy and other food protein enteropathies in kid which are different immune mechanism, but if we talk about the acute allergies, these seem to be largely genetically mediated, there are susceptibility genes involving all kinds of immune products and to some element perhaps some environmental factors as well.

DR. JAY GOLDSTEIN:

Is there a waxing and waning of these allergies?

DR. SHEILA CROWE:

It seems so, epidemiologically food allergy is the most common in childhood and it tends to decrease with time. So, again, it seems to be something that people tend to outgrow and then they replace by inhalent allergies things like seasonal rhinitis and asthma as that individual gets older and it is not necessarily to food antigens anymore.

DR. JAY GOLDSTEIN:

Food allergies and cells is it really atopic individuals who are more prone to this.

DR. SHEILA CROWE:

Yes and that is where the genetic susceptibility comes in as there has been a quite a number of genetic factors that has been looked out at combined perhaps with some environmental factors, is the environment in which these atopic conditions including food allergy may arise.

DR. JAY GOLDSTEIN:

If you are just tuning in you are listening to GI Insights on ReachMD, The Channel for Medical Professionals. I am your host Dr. Jay Goldstein and joining me today to discuss food allergies fact or fiction is Dr. Sheila Crowe professor of medicine division of gastroenterology and hepatology in the department of medicine at the University of Virginia School of Medicine.

Well let's turn clinical here for a second. How might a food allergy present in childhood and in adulthood.

DR. SHEILA CROWE:

On a willing children, I mentioned one type is the Cow's milk allergy associated enteropathy and this is something that gets noticed fairly early in life and often these children are switched to formulas that contain soya or other proteins sometimes soya protein allergy will ensue as solid foods are introduced into the diet, individual who is susceptible may start to develop allergies to eggs perhaps to wheat and other common food proteins over time and some of these allergies may be manifested as atopic dermatitis or eczema, although not all of the eczema is food allergy related. They may have changes around their oral area, lip swelling, erythema, swollen tongue, things that relate to very acute reaction when that food protein touches that area and asthma can be a presentation of food allergy as well.

DR. JAY GOLDSTEIN:

Well when these kids show up in infancy is it failure to thrive, diarrhea, recurrent vomiting, what are the more common symptoms?

DR. SHEILA CROWE:

Well gastrointestinal symptoms are not rare both in children and adults and of course that is where my interest comes as a gastroenterologist. The cow's milk and other protein enteropathies are definitely are primarily a gastrointestinal presentation including weight loss, but diarrhea sometimes bloody diarrhea, iron deficiency anemia, some of the cow's milk protein presentation also include nausea and vomiting more acute reactions when that food protein hits sensitized mucosa in the upper GI tract.

DR. JAY GOLDSTEIN:

How do you diagnose it?

DR. SHEILA CROWE:

Well that is a good question. Food allergies are not the easiest things to diagnose. Partly, because our tests are not entirely accurate and sensitivity may be an issue as well as less often specificity. In terms of the protein enteropathies usually a biopsy is necessary, but for the acute hypersensitivity to things like eggs, wheat, cow's milk protein, there is different options depending on the age of the child. If one is able to and certainly in adults and the skin prick testing is considered the most commonly used and not necessarily a gold standard, but it is commonly used in practice where a panel of food antigens and again there is some controversy about the best type of food antigens to use fresh extracts are often preferred in certain types of foods where they are placed on the skin and one looks for a positive reaction compared to a positive control which is injection of histamine and there are some blood tests as well.

DR. JAY GOLDSTEIN:

Is there a place for in childhood for elimination diet?

DR. SHEILA CROWE:

Elimination diets do form, I certainly use them and I am adult gastroenterologist, a little hard in a child it is often better if you can specifically identify the specific food that is being suspected simply because their diets are not that diverse at that age and it is difficult to eliminate eggs, milk, and wheat for example early on in life. It does leave them much to chew down on.

DR. JAY GOLDSTEIN:

Already. Now, you mentioned wheat, is that gluten sensitivity or is that wheat allergy.



DR. SHEILA CROWE:

Another good question. There are 2 different syndromes or clinical disorders. There is such a thing as a wheat allergy which is likely other allergies I have talked about which is an immediate hypersensitivity involving IgE and other mast cells and/or basophils cross reacting immunoglobulin where the wheat protein that elicits this hypersensitivity. In contrast, the gluten induced enteropathy or celiac disease is probably the best-known term for it is a different immune mechanism. It does not involve allergic mechanisms and traditional sense is a T-cell mediated enteropathy that can prevent in childhood more often now presenting in adult life.

DR. JAY GOLDSTEIN:

Is gluten enteropathy really an allergy?

DR. SHEILA CROWE:

It is grouped under allergy because it is an immune mediated disease, but the immune mechanisms are quite different than wheat allergy and some of the things like peanut allergies that we discussed already.

DR. JAY GOLDSTEIN:

What are the treatment options beyond avoidance?

DR. SHEILA CROWE:

At the present time, with most food antigen there is not specific therapies directed against them. There

have been some child there is one publish in the New England Journal a while ago a male looking at anti-IgE directed therapies for peanut allergy that seemed to decrease the sensitivity in a small clinical trial whether that is being used very often is probably unlikely simply because it only decrease reactivity of small amount and if your reaction is anaphylaxis probably the safety is not there.

DR. JAY GOLDSTEIN:

I would like to thank my guest from the University of Virginia School of Medicine, Dr. Sheila Crowe for spending time with us today to discuss the Topic Food Allergies Fact or Fiction. Dr. Crowe, thank you very much for being our guest.

DR. SHEILA CROWE:

Thank you very much for inviting me.

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